Date: January, 2004

Guidelines For Estimating
Timothy Hay Production Costs - For Export

This guide is designed to provide you with planning information and a format for calculating the costs of production for timothy hay for export. Also available, is an Excel spreadsheet that can be downloaded from the Manitoba Agriculture, Food and Rural Initiatives website.

The cash input costs associated with growing this crop in Manitoba are substantial. It is extremely important for farm managers to do detailed calculations to select the optimum combination of crop inputs to maximize profits. Detailed planning is also necessary when estimating the amount of capital required to finance inputs, equipment and storage facilities. Therefore, producers are encouraged to substitute their own figures in the attached budget to develop their own cost of production for export timothy hay.

Disclaimer: This budget is only a guide and is not intended as an in depth study of the cost of production of the Manitoba Timothy industry. Interpretation and utilization of this information is the responsibility of the user. If you require assistance with developing your individual budget, please contact your local MAFRI Farm Management Specialist or Regional Forage Specialist.

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The last few years in Manitoba, has seen the demand for timothy hay exports increase dramatically. Last year nearly 30,000 tonnes of hay was exported out of the province, mainly to Japan. Processors pay premium prices for quality which is a product that is celery green in colour and free of brown leaves.

Experienced producers have had success in producing a quality product. They have made all necessary commitments to satisfy the customer to produce a quality product. Innovative management has resulted in a higher percentage of good quality exportable hay being produced regardless of the weather. Manitoba has the potential to be a major player in this market.

Export Timothy Hay - Cost of Production Summary January, 2004

A. Operating Costs	Establishment Cost $/acre	Annual Cost $/acre	$/tonne	Your Cost
1.00 Establishment Cost	n/a	$20.13	$8.91	
1.01 Seed (establishment)[1]	$11.00	n/a	n/a	
1.02 Fertilizer	$13.20	$26.40	$11.68	
1.03 Chemicals	$18.00	$12.00	$5.31	
1.04 Field Fuel Costs	$8.91	$5.84	$2.58	
1.05 Moving Costs	$0.00	$19.92	$8.81	
1.06 Custom Costs	$0.00	$0.00	$0.00	
1.07 Repair & Maintenance	$4.60	$17.52	$7.75	
1.08 Insurance	$1.36	$0.25	$0.11	
1.09 Miscellaneous	$2.00	$2.00	$0.88	
1.10 Land Taxes	$6.50	$6.50	$2.88	
Subtotal Operating	$65.57	$110.56	$48.92	
1.11 Interest on Operating	$1.80	$3.04	$1.35	
Total Operating Costs	**$67.37**	**$113.60**	**$50.27**	
B. Fixed Costs				
2. Depreciation				
2.01 Machinery	$26.09	$26.09	$11.54	
2.02 Storage	$6.75	$6.75	$2.99	
3. Investment				
3.01 Land	$16.00	$16.00	$7.08	
3.02 Machinery	$6.38	$6.38	$2.82	
3.03 Storage	$3.30	$3.30	$1.46	
Total Fixed Costs	**$58.52**	**$58.52**	**$25.89**	
C. Labour	**$15.00**	**$12.00**	**$5.31**	
Total Cost of Production	**$140.89**	**$184.12**	**$81.47**	

1. The cost of establishing the crop, $140.89, was spread over 7 years at $20.13 per year.

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Export Timothy Hay Cost of Production Worksheet

1. This budget provides a guideline to determine the cost of production for a timothy hay enterprise for export based on 600 acres.

2. The machinery and equipment complement is similar to a grain enterprise with the addition of a baler, mower conditioner and a storage shed.

3. The investment in machinery and equipment was assumed to be $290 per acre. An additional $150/acre is included for storage.

4. An average yield of 2.26 tonnes per acre was assumed.

5. Land was valued at $400 per acre.

A. Operating Costs

				Your Cost
1.01 Seed				
Establish		2.0	lbs/acre	
	x	$4.00	$/lb	
	+	$3.00	applicator rental ($/acre)	
	=	**$11.00**	$ /acre	
1.02 Fertilizer				
Nitrogen		20	lbs/acre seeding	
Establish	x	$0.33	cost/lb seeding	
	=	$6.60	$ /acre	
Annual		60	lbs/acre cropping	
	x	$0.33	cost/lb cropping	
	=	$19.80	$ /acre	
P_2O_5		20	lbs/acre seeding	
Establish	x	$0.280	cost/lb seeding	
	=	$5.60	$ /acre	
Annual		20	lbs/acre cropping	
	x	$0.280	cost/lb cropping	
	=	$5.60	$ /acre	

				Your Cost
K_2O		0	lbs/acre seeding	
Establish	x	$0.150	cost/lb seeding	
	=	$0.00	$ /acre	
Annual	+	0	lbs/acre cropping	
	x	$0.150	cost/lb cropping	
	=	$0.00	$ /acre	
Sulfur		0	lbs/acre seeding	
Establish	x	$0.260	cost/lb seeding	
	=	$0.00	$ /acre	
Annual		0	lbs/acre cropping	
	x	$0.260	cost/lb cropping	
	=	$0.00	$ /acre	
Zinc		0	lbs/acre seeding	
Establish	x	$1.500	cost/lb seeding	
	=	$0.00	$ /acre	
Annual		0	lbs/acre cropping	
	x	$1.500	cost/lb cropping	
	=	$0.00	$ /acre	
Applicator rental	=	$1.00	$ /acre	
Establish Cost	=	**$13.20**	**$ /acre**	
Annual Cost	=	**$26.40**	**$ /acre**	
1.03 Herbicides				
Establish		$10.00	broadleaf control (establish)	
	+	$8.00	wildoats (establish)	
	=	**$18.00**	**$ /acre**	
Annual	=	**$12.00**	broadleaf control (cropping)	

Your Cost

1.04 Field Fuel Costs

a) Establish operations

Operation	Times Over	Width feet	Speed mph	Fuel $/ac.	
Spray	1.0	90	10	$0.19	
Seeding	1.0	40	7	$0.36	
Cultivate	2.0	48	5	$2.36	
Fertilizer	1.0	40	8	$0.53	
Harrow Packer	1.0	60	7	$0.41	
Spray	1.0	90	10	$0.19	
Mower	1.0	12	5	$2.84	
Bale	1.0	12	7	$2.03	
Total				**$8.91**	

b) Annual operations

Operation	Times Over	Width feet	Speed mph	Fuel $/ac.	
Fertilizer	1.0	40	8	$0.53	
Spray	1.0	90	10	$0.19	
Cut	1.0	12	7	$2.03	
Recondition	1.25	12	10	$1.06	
Bale	1.0	12	7	$2.03	
Total				**$5.84**	

Total Fuel Costs	estimated	calculated	
	$0.00	$8.91 establishment	
	$0.00	$5.84 cropping	

1.05 Moving Costs

Pick up, load, unload & stack

Establish		$0.00	establishment cost	
Annual		2.26	tonnes/acre	
	x	2204	lbs/tonne	
	÷	750	bale weight (lbs)	
	x	$3.00	$/bale	
	=	**$19.92**	**$ /acre**	

				Your Cost
1.06 Custom Operations				
Establish		$0.00	**$ /acre**	
Annual		$0.00	**$ /acre**	
1.07 Repair & Maintenance				
Establish*		4.0%	percentage rate	
	x	$115	investment/acre	
	=	**$4.60**	**$ /acre**	
Annual**		4.0%	percentage rate	
	x	$438	investment/acre	
	=	**$17.52**	**$ /acre**	
1.08 Insurance				
Establish		$40.00	$/acre coverage	
	=	**$1.36**	**$ /acre**	
Annual		1.201	tonnes/acre	
	x	50%	coverage level	
	=	0.601	tonnes/acre coverage	
	x	$61.00	$/acre coverage	
	=	$36.63	$/acre coverage	
	=	**$0.25**	**$ /acre (administration fee)**	
1.09 Miscellaneous				
Establish	=	**$2.00**	**$ /acre**	
Annual	=	**$2.00**	**$ /acre**	
1.10 Land Taxes				
Establish	=	**$6.50**	**$ /acre**	
Annual	=	**$6.50**	**$ /acre**	

*Investment to establish crop includes tractors, sprayer, cultivator & packer

**Investment in annual cropping includes tractors, baler, truck & trailer, mower & reconditioner

1.11 Interest on Operating

				Your Cost
Establish		$65.57	Subtotal Operating	
	÷	2	average	
	x	5.5%	interest rate	
	=	**$1.80**	**$ /acre**	
Annual		$110.56	Subtotal Operating	
	÷	2	average	
	x	5.5%	interest rate	
	=	**$3.04**	**$ /acre**	

B. Fixed Costs

Capital Costs

Equipment		Estimated Market Cost	Allocated % to Timothy	Allocated Timothy	Your Cost
Tractor	250 hp	$180,000	10%	$18,000	
Tractor	150 hp	$130,000	25%	$32,500	
Tractor	90 hp	$70,000	25%	$17,500	
Sprayer		$5,000	10%	$500	
Cultivator		$3,000	5%	$150	
Harrow packer		$5,000	5%	$250	
Baler		$75,000	90%	$67,500	
Truck & Trailer		$25,000	40%	$10,000	
Mower conditioner		$25,000	70%	$17,500	
Reconditioner		$10,000	100%	$10,000	
Total				**$173,900**	
	Cost / acre	600 acres		$289.83	
Storage Shed		$90,000	100%	**$90,000**	
	Cost / acre	600 acres		$150.00	
Total				**$263,900**	

2. Depreciation $\frac{\text{Original Value - Salvage Value}}{\text{Useful Life}}$

2.01 Machinery

			Your Cost
	$289.83	cost/acre	
-	$28.98	salvage value	
÷	10	useful life	
=	**$26.09**	**$ /acre**	

2.02 Storage

			Your Cost
	$150.00	cost/acre	
-	$15.00	salvage value	
÷	20	useful life	
=	**$6.75**	**$ /acre**	

				Your Cost
3. Investment		**Original Value + Salvage Value / 2 x Investment Rate**		
3.01 Land				
		$400.00	cost/acre	
	x	4.0%	% investment rate	
	=	**$16.00**	**$ /acre**	
3.02 Machinery				
		$289.83	cost/acre	
	+	$28.98	salvage value	
	÷	2	average	
	x	4.0%	% investment rate	
	=	**$6.38**	**$ /acre**	
3.03 Storage				
		$150.00	cost/acre	
	+	$15.00	salvage value	
	÷	2	average	
	x	4.0%	% investment rate	
	=	**$3.30**	**$ /acre**	
C. Labour				
Establish		$10.00	$/hour	
	x	1.5	hours/acre	
	=	**$15.00**	**$ /acre**	
Annual		$10.00	$/hour	
	x	1.2	hours/acre	
	=	**$12.00**	**$ /acre**	

For more information contact your local Manitoba Agriculture, Food and Rural Initiatives office.

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